THE VETERINARY RECORD

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EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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PROFESSIONAL DISCUSSIONS.

The practice of holding "impromptu discussions" upon a subject selected by ballot from a previously chosen list, which the Central V.S. instituted some time ago at the instance of Prof. Macqueen as an occasional variation to the consideration of essays, seems a distinct success. Despite a small attendance—due probably to the exceptionally bad weather, the second of these discussions, which we reported last week, proved both helpful and interesting. The subject "Ulcerated Cornea in the Dog" now concerns most of our practitioners, and all will find the discussion worth reading. Though the meeting afforded little evidence of that conservatism in therapeutics that is sometimes attributed to the veterinary profession, while new drugs and methods were freely lauded, it is noteworthy that nearly all the speakers agreed in testifying to the value of calomel sprinkled upon the eye. This is an old treatment of proved excellence; and we fancy—as the discussion seems to indicate—that it is still much more generally adopted than some clinicians realise. We have known practitioners who, while themselves habitually relying upon calomel for ulcerated cornea, were under the impression that it was little used by others.

But has a practitioner—unless he happens to have a very wide professional acquaintance, any sufficient opportunity of knowing the general opinion and practice of his colleagues? We think not. There are not a few of the newer drugs—such as the organic silver compounds, nuclein, arecoline, and peroxide of hydrogen—which we know vaguely are extensively used by practitioners in this country; but we have few clinical records of their effects.

Conversely, we know that the use of sedatives in the equine colics—and especially of opium and morphia, has declined considerably of late years, but the change has not been accompanied by much public discussion. Few, again, will deny that firing and blistering have lost ground during the last decade or two; the use of setons as a counter-irritant has lost still more; but these alterations have been even more imperceptible than the change in the treatment of colic, which did produce a little stir.

These mutations of professional opinion would develope more rapidly, and be far more readily followed by the isolated practitioner, if veterinary surgeons collectively were more ready to impart their experience to each other. There are two ways of doing so. One is by contributing to the professional journals, and we know how remiss most are in this respect. The other is by speaking freely at meetings; and these "impromptu discussions" seem to be a means to this end.

A CASE OF BASTARD STRANGLES. (ABDOMINAL).

Subject.—A grey mare, six years old, the property of Mr. Edward Ballard, a well-known jobmaster at Ashford, Kent.

History.—The mare had been running in a brake regularly during the summer season, between Ashford and Folkestone, and district; and when nearing the journey's end was taken ill on the road and another horse had to be requisitioned to finish the journey. The animal was taken out and with difficulty got to Folkestone and stabled, and I was called in to attend.

Symptoms.—The mare then showed every symptom of suffering from an attack of "acute" passive congestion of the lungs, apparently as a result of over-exertion, and later on pleurisy and pericarditis supervened.

Treatment.—The animal was put in a good roomy loose box, and allowed plenty of fresh air and rugged up in the usual manner. Febrifuges were administered and diffusible stimulants. Mustard was applied locally to the chest and over the region of the heart. The animal apparently recovered.

Remarks.—The mare was boxed home and put in a loose box, and allowed to remain idle for some considerable time, in order to recover from the weakness resulting from the attack. This the owner informed me she had done, apparently, and was so fit and well that she was catalogued to be sold at Tattersall's with a friend's coach horses on a certain date, when the stableman discovered that during the night the mare had developed a huge swelling in the pectoral and abdominal region. This necessitated her being withdrawn from the sale, and I received a telephone message from the owner to attend her again. On my arrival I found the animal in the condition illustrated by the photograph, which shows how extensive the swelling was. I obtained fully six gallons of pus from abdominal cavity, and the mare is now convalescent and the swelling has disappeared. The pleurisy and pericarditis was evidently of septic origin,

HENRY B. EVE, M.R.C.V.S.

Folkestone, Dec. 11.

An outbreak of foot-and-mouth disease is reported from various parts of Denmark, and the authorities have issued orders for the slaughter of stock in the affected areas. Prof. Bang, the chief Government veterinary officer, believes that the infection has been brought by gulls from Germany, where, it is reported, the disease is present on no fewer than 3,500 farms.—*The Standard.*

UMI

RETENTION OF THE FŒTUS.

Towards the end of last February a local cow-keeper bought at Retford Market a cow that was due to calve in a few days. On arrival by rail in Sheffield she was found "down" in the cattle truck, and showed typical symptoms of milk fever, She was carted home, and treated by the owner himself for three days before she got up.

Thinking that the dealer had kept the calf, the owner wrote asking for the calf, but instead got a reply stating that the cow had never calved to his knowledge.

The cow was seen by me on July 28, and as she appeared in the last stages of tuberculosis I ordered isolation and the destruction of her milk.

Her udder was indurated in the superior portions of both hind quarters—a common condition in newly calved cows and often difficult to differentiate from tuberculosis. The owner informed me that every morning he found lying behind her large "clots" of yellow jelly-like material containing hair. I persuaded him to have the cow slaughtered, which he had done on August 19th.

The post-mortem examination revealed a marked case of old standing generalised tuberculosis with large masses of "grapes" adhering to the pleura and peritoneum. The supra-mammary lymphatic glands were caseous. The uterus contained a large white fœtus in an advanced state of decomposition, along with nearly two gallons of a custard-like fluid which was odourless. Both shoulder blades and the carpal bones of the fœtus were devoid of skin and flesh. The fœtus showed no evidence of tuberculosis. The chief symptoms shown by the cow were obstinate constipation, a steady fall in the milk yield, and the uterine discharge.

Youatt mentions a case where the head of a calf (all the other parts having passed away unobserved) was retained in the uterus for 18 months. Labour pains then came on, and with veterinary aid the head was delivered, and the cow was well in a fortnight.

W. J. Young, M.R.C.V.S., D.V.S.M.

Sheffield.

ABSTRACTS FROM FOREIGN JOURNALS.

Mammary Botryomycosis in a Filly.

Cuny and Auger record (*Journal de Med. Vet. de Lyon*) the case of a three-year-old filly treated in the Infirmary of the Lyons School. The history was that, six months before bringing the animal to the School, the owner had noticed the periodic appearance of a warm and painful œdema, beginning at the premammary region and descending (at the same time widening laterally) as far as the umbilical region. At the end of a few days it would disappear, but during the periods of remission the mammary gland remained distinctly deformed. Soon small abscesses developed, and these left persistent fistulæ behind them. A veterinary surgeon had treated the animal with an absorbent and antiseptic ointment without benefit.

The authors' examination resulted as follows. The mammary glands were voluminous, deformed, and asymnetrical, and were surrounded by a warm painful œdema which rendered their examination very difficult. The right gland, near to the median line, was pierced by two fistulæ through which a little purulent serosity was oozing. Palpation revealed, scattered within the glandular mass, indurated centres which were especially voluminous in the region of the cutaneous orifices. The left gland was very slightly indurated, and appeared much less severely affected than the right.

The combined symptoms indicated either actinomycosis or botryomycosis, the rarity of equine actinomycosis justifying a strong presumption in favour of botryomycosis. The diagnosis was made certain by microscopical examination, which showed some botryomyces. As a rapid extension of the lesions was feared, total extirpation of the mammary glands was decided upon.

The filly was cast, and an incision about sixteen inches long was made upon the median line proceeding from the premammary to the perineal region. The skin was then separated from the gland on each side for an equal distance, and the gland dissected away from the underlying tissues. This was easy in the extreme in the anterior portions, but as the posterior mammary zone was approached, the presence of vessels made increasing care necessary. Numerous and firm silk ligatures were applied, and finally the mammary mass was completely extirpated by a few strokes of the knife. This left a vast cavity between the skin and the abdominal walls, into which an abundant hæmorrhage immediately commenced. The cavity was therefore packed with aseptic wadding enveloped in gauze, and a firm cutaneous suture of strong silk was applied to keep the dressing in position.

The next day the animal was again cast, and four of the stitches were removed, when it was seen that, despite the packing, an abundant effusion into the cavity had taken place. All the stitches were then immediately cut, exposing the cavity, and permitting the removal of about two litres (approximately 3½ pints) of coagula. The wound was then cleansed and disinfected with warm sterilised water and with sublimate solution, and the packing was re-applied.

The animal's condition remained unaltered for about forty-eight hours. After that short period, despite daily lavages of the wound, she became dull, her temperature rose, and gaseous crepitation, indubitably indicating the commencement of gangrenous septicæmia, appeared in the perineal region behind the operative wound.

The wound was then carefully cleansed with peroxide of hydrogen solution, and the same antiseptic was injected subcutaneously into the crepitating regions—200 c.c. (about 6 2-3 fl. oz.) being injected daily. The injections caused immediate and violent outbreaks of sweating. The crepitation rapidly diminished, and then disappeared; the

limited œdema became warm and sensitive, and the general condition improved. All danger had disappeared at the end of three days, the commencing septicæmia having completely subsided under the action of hydrogen peroxide.

The wound, treated daily with varied antiseptics, assumed a good appearance, but closed slowly. Cicatrisation was not complete when, forty days after the operation, the filly left the school, and it was only five months after the operation that the recovery was complete and definitive.

The principal tumour was composed of hard cirrhosed tissue, and microscopical examination demonstrated the existence of numerous botryomyces in the midst of the connective tissue.—*Annales de Med. Vet.*

Strangles Abscess with Perforation of the Œsophagus.

Magneron records *(Revue Veterinaire)* the case of a yearling filly of Breton breed, which, eight days after being purchased, developed a thick, frequent, painful cough, with dysphagia and slight catarrh. Slight pressure upon the parotid region was rather vigorously resented by the animal. A diagnosis of inflammation of the throat, due to strangles, was made, and the orthodox treatment was instituted—stimulants applied externally to the parotid region, emollient and antiseptic fumigations, and warm liquid and easily swallowed solid nourishment.

Five days afterwards the symptoms became aggravated. The left parotid region became the seat of a diffuse, warm, and very painful swelling; the temperature reached 103·1 F., prostration was intense, and the appetite was completely lost. There was now an abundant and fœtid nasal catarrh, the odour of which recalled that of caries.

Puncture of the abscess allowed the escape, not of the creamy pus characteristic of strangles, but of a semi-liquid pus mixed with alimentary particles in a fermenting condition. There was therefore a communication between the abscess cavity and the œsophagus.

The animal soon died, and post-mortem examination revealed the following lesions. The parotidean tissue was necrosed, an abundant purulent collection was found in the guttural pouch, the wall of which had disappeared at the point of contact between the guttural pouch and the œsophagus. The œsophagus itself showed an irregular perforation near its origin, and the pharynx was violently inflamed. The repulsive odour of the catarrh in the final stages of the illness was thus explained.—*Annales de Med. Vet.*

The "White Diarrhœa" of Chickens.

An acute gastro-intestinal catarrh, simulating an infectious disease, often rages amongst chickens which are artificially hatched and reared, and is known amongst breeders as "white diarrhœa" on account of the white discharge. Generally the cloaca becomes completely glued up, and the retention of the discharges resulting from the occlusion causes death. According to Westphal *(Deutsche landwirtschaftl. Geflugel. Zuchtung)* the chief causes of this disease are errors in breeding, and in the methods of artificial hatching, and improper treatment and feeding of the chickens.

Only healthy and fully grown fowls of at least two years old should be used for breeding. Chickens hatched from the eggs of younger hens are weaklings, which are predisposed to diseases.

Insufficient absorption of the contents of the yolk-sac is also said to be a cause of diarrhœa. This abnormal absorption is occasioned by errors in artificial incubation. Too high a temperature (105·8 F. or over) after the second week—a somewhat long reduction of temperature in the last week is not so harmful as a short excess of temperature—is one such error; others are lack of sufficient fresh air in the incubator, insufficiency of moisture, overcrowding of the apparatus with eggs, and negligent turning.

Diarrhœa may appear if the chickens are fed too early after hatching. The contents of the yolk-sac afford sufficient nourishment for the first two days of the chicken's life, and feeding should not begin until 48 to 72 hours after hatching. Grit should not be given too early; its place should be taken at first by sand and fine gravel. Pure water should always be accessible to the chickens.

The chicken house should not be of too low a temperature, should be well ventilated, and should not be overcrowded. These precautions greatly reduce the risk of the disease.—*(Berliner Tier. Woch.)*

Experimental Leucæmia in Fowls.

V. Ellermann and O. Bang, of Copenhagen *(Zeitschrift für Hygiene)* say that leucæmia in fowls sometimes appears enzootically or even epizootically. In affected fowls the blood is found to be leucæmic, and there are also lesions of the bone-marrow and tumour formation of the liver and spleen. So far, the leucæmia of fowls resembles that of mammals; but there is also a *pseudo-leucæmia* of fowls in which the organs only are affected, and the blood is normal.

Leucæmia and pseudo-leucæmia of fowls seem to be infectious diseases. The authors succeeded in transmitting the leucosis to other fowls by intravenous injection of an emulsion of the leucæmic organs of affected ones. Pigeons, guinea-fowl, turkeys, and rabbits were refractory to infection. The period of incubation was from one to two months, and 60% of the inoculated subjects remained healthy.

The cause of the disease, according to the authors, is an ultravisible virus.—*Berl. Tier. Woch.*

Œsophagotomy in a Dog.

Boden reports a case of successful œsophagotomy in a dog (Spitz) of three months old. The animal had swallowed a piece of bone which had been arrested at the entrance to the thorax, had remained in that position for two days, and was causing considerable inflammation of the surrounding tissues. The probang had failed to remove the obstruction, and the administration of oily mucila-

ginous substances had also been unavailing. Œsophagotomy was therefore decided upon.

Chloroform was not given. The dog received 0·015 gramme (nearly ¼ grain) of morphia subcutaneously, and cocaine was also injected locally; the operation being thus performed quite painlessly. The obstruction was cut down upon, and an incision was made through the œsophagus just large enough to permit the extraction of the foreign body. It proved to be a disk of bone about an inch in diameter and about 1-16 of an inch thick; it was sharp-edged, and was already foul smelling.

The wound was cleansed and fitted with a small drainage-tube, while some stitches were passed through the *external skin only*, not through the œsophagus or the muscles of the neck. The wound healed well, the foul smell quickly disappearing and giving place to a sourish one. The temperature was 103·3 F. the day after the operation, but afterwards feverish symptoms were not present.

During the operation, and also for some days afterwards, the dog showed frequent attacks of weakness, and spirits of camphor was given subcutaneously as a stimulant. For the first eight days after the operation, the animal was fed by laying him upon his back and administering the nourishment (which consisted of sweetened milk, raw eggs, wine, and at the last, of thick gruel) in coffeespoonful doses.

After about twelve days the patient was discharged; and Boden, examining him about five weeks later, satisfied himself that the operation had not resulted in the establishment of a fistula.—*Berl. Tier. Woch.*

[The drainage tube, the method of suturing, and the manner of administering food, are all worth noting. Probably the two first were adopted on account of the unhealthy state of the tissues, and they certainly succeeded better than the orthodox suturing would be likely to do under the circumstances.—TRANSL.]

W. R. C.

GAS LIQUOR AS A PARASITICIDE.

Gas liquor is recommended by Rousellot as a parasiticide. He finds its density varies from 3-22, and its weight per litre also varies from 995-1075 grammes, at 22 C. the Ammon. Carb. crystallises out and is deposited.

In a 10% or 20% solution it destroys all kinds of external parasites and their eggs. Three dressings at intervals of a day usually suffice to effect a cure.

A 2% solution forms a useful routine wash for the mane and tail.

Its cheapness is one of its great recommendations, as it can usually be obtained from the gasworks for the asking.—*Rec. de Med. Vet.*

ENORMOUS ENLARGEMENT OF THE MAMMÆ IN A BITCH.

Petit and Germain describe a curious case in a small terrier bitch. The mammæ were enlarged to the size of her body and were hard and tense but not painful. She died during parturition, and the mammæ were examined post-mortem, there was neither œdema nor infiltration of the connective tissue. The lobes had all the characteristics of the healthy gland, and on pressure yielded a whitish fluid which was not at all like pus. In the uterus were three pups, two normal and one far advanced in decomposition. Microscopical sections showed no alteration from those of the normal gland during lactation.—*Rec. de Med. Vet.*

A NEW PARASITE OF THE OX.

Neumann has examined a parasite found by Emery at Constantine, and has given it the name of *Onchocerca Gutterosa*. The parasite is found in both adult and young bovines, in discreet tumours, especially on the inner surface of the laminæ of the cervical ligament.

The male has an average length of 33 mm. and a maximum diameter of ·098, it has a soft and striated covering, with a terminal mouth with four small papillæ, an uncinate caudal extremity furnished with papillæ and some with a lateral hook. The length of the female is undetermined, as no complete specimen was obtainable, but the head is like that of the male, the caudal extremity obtuse. The eggs contained embryos. Onchocerca G. is a new species belonging to the Filaria (Muell), Spiroptera (Rud), or Onchocerca (Diesing).

To the same genus belong O. reticulata of the knee and subcutaneous connective tissue of the horse; O. cervicalis of the cervical ligament of the horse; O. Armillata of the interior of the aorta of the ox in India; O. fasciata of the camel, India; O. volvulus of the subcutaneous tissue of man, W. Africa.

The study of the genus is only in its infancy.—*Rev. Vet.*

(The translator recently came across tumours of the knee and abdominal fascia in a Jersey cow in S. Australia, caused by an onchocerca of indeterminate species, numbers of which were also encysred in the muscle tissue of the colon.)

F. E. P.

Royal College of Veterinary Surgeons.

EXAMINATIONS IN LONDON.

At a meeting of the Board of Examiners held in London on Dec. 9th for the Written, and on Dec. 16th for the Oral and Practical Examinations, the following gentlemen passed their Third Examination;—

Mr. F. G. Buxton	Mr. E. J. Laine
J. Bradley	A. V. Nicholas
W. H. Kirk	C. W. Perrin
R. E. Leach	B. M. R. West

The following passed their Second Examination:

Mr. A. L. M. Bebb	Mr. W. E. Petty
S. E. Hill	E. M. Robinson
C. J. R. Lawrence	S. L. Slocock
R. A. Murless	P. L. Thierry
A. A. Pryer	

The following passed their First Examination;

Mr. A. H. Adams *	Mr. B. J. W. Nicholas *
J. A. Edwards	L. D. D. Sewell

Marked thus * passed with Second Class Honours.

FRED BULLOCK, *Registrar.*

EXAMINATIONS IN IRELAND.

At the meeting of the Board of Examiners held in Dublin on December 9th for the written, and on December 13th and 14th for the Oral and Practical examinations, the following gentlemen passed their Final Examination:

Mr. J. M. White	Mr. G. A. Kelly
S. Hunter	J. S. MacCann
C. H. Bryans	F. J. Weir
P. A. Carroll	E. Wilson

The following passed their Third Examination:

Mr. R. Devereux	Mr. L. C. Maguire *
W. Flanagan	R. Marner
J. J. G. Keppel	W. J. O'Donoghue
P. O'Connell	A. E. O'Neill *
R. P. Byrne	W. E. Phipps
J. Evans	W. H. Power
V. Fox	C. J. Ryan
L. J. Kelly	

The following passed their Second Examination:

Mr. V. Kennealy	Mr. B. J. Clancy
T. F. Quirke	C. E. Huston *
P. J. Sheil	T. J. Carroll
E. N. Wyly	

The following passed their First Examination:

Mr. J. Campbell	Mr. H. J. Lowe
W. G. Clarke	S. O'Donel
T. F. Donworth	M. H. Reid
J. J. English *	

Marked thus * passed with Second Class Honours.

FINLAY KERR, M.R.C.V.S.,
Secretary Board of Examiners, Ireland.

EXAMINATIONS IN EDINBURGH.

At a meeting of the Board of Examiners held on December 9th for the Written, and on and between December 14th and 17th inclusive for the Oral and Practical Examinations, the following gentlemen passed their Final Examination:

Mr. W. Aitken	Mr. W. S. Lornie
H. Allison	H. C. Lowry
J. L. Cormack	J. P. Swan
H. Fraser	C. G. Thompson

The following passed their Third Examination:

Mr. A. W. Carter	Mr. T. A. McClintock
W. Dalling	G. Currey

The following passed their Second Examination:

Mr. E. Anderson	Mr. H. E. Jackson
R. E. Drennan *	S. E. Holmes
D. R. Williamson *	

Marked thus * passed with Second Class Honours.

EXAMINATIONS IN GLASGOW.

At a meeting of the Board of Examiners held in Glasgow on December 9th for the Written, and on December 14th and 15th for the Oral and Practical Examinations, the following gentlemen passed their Final Examination:

Mr. W. Anderson	Mr. W. M. Jackson
W. S. Inglis	D. A. Taylor
J. Dunlop	

The following passed their Third Examination:

Mr. J. Scott *	Mr. W. Macfarlane *

The following passed their Second Examination:

Mr. D. Pollock	Mr. J. McI. Galloway
D. G. MacLeod	P. J. Turner

Marked thus * passed with Second Class Honours.

ARCHIBALD BAIRD, M.R.C.V.S.,
Secretary Board of Examiners, Scotland.

EXAMINATIONS IN LIVERPOOL.

The Court of Examiners was held at University of Liverpool on 15th and 19th inst. The following gentlemen passed their Final Examination and have been admitted Members of the profession:

Mr. W. Taylor	Mr. T. G. Millington

The following passed their Third Examination:

Mr. H. D. Lewis	Mr. A. D. Bunton

The following passed their Second Examination:

Mr. A. D. Morgan	H. A. Thorn

The following passed their First Examination:

Mr. M. W. Holland	Mr. J. W. Beaumont

CHARLES BLACKHURST, M.R.C.V.S.,
Secretary Board of Examiners, Liverpool.

REPORT OF THE CHIEF VETERINARY INSPECTOR, CITY OF SHEFFIELD, FOR THE YEAR 1909.

During the year the staff was increased to three qualified Veterinary Surgeons, a Junior Assistant Veterinary Inspector being appointed in the month of May. In December the Senior Assistant Veterinary Inspector left, having taken up a post in Western Africa under the Colonial Government. The increase in staff was caused by a decision of the Health Committee that inspection of slaughterhouses and meat in the districts outside a radius of one mile from the centre of the City should be carried out by the Veterinary Staff, and that the Veterinary Surgeons should inspect the animals coming into the City by train from markets outside.

Dairy Inspection.—In addition to examining the udders of the milking cows in the City cowsheds, the Veterinary Inspectors now also inspect the sanitary conditions of the cowsheds, dairies and milk vessels, and take note of the cleanliness of the cows, also of the feeding and general management. In the case of poor samples of genuine milk found by chemical analyses, enquiries, sometimes of a protracted nature, are made into the principles and methods of feeding the cows, and friendly advice is given to assist the owners to improve the quality of the milk. During the year over 1,300 visits were made to dairy farms within the City. Two visits were made to farms outside the City boundaries from which the milk contained streptococcic infection; and the udders of 37 cows were examined. No definite conclusions could be arrived at, and it is probable that these cases arose through the farmers using the milk from newly calved cows too soon.

Tuberculosis and Milk.—The power of the Health Committee to deal with tubercular infection in milk is contained in the Tuberculous Milk Clauses of the Sheffield Corporation Act, 1900, and the Dairies, Cowsheds and Milkshops Amended Order of 1899. The latter only gives power over milk from cows housed in the city cowsheds ; the former applies to milk sold within the city, whether produced by cows inside or outside the city.

In carrying out the executive work under these powers three kinds of samples of milk are taken ; mixed, control, special. A mixed sample is one of country milk brought into the city by road or rail conveyance. A control sample is one taken to check the veterinary examination of the cows' udders when in following up tuberculous mixed milks no cows can be found exhibiting signs of tubarculosis of the udder, or in city cowsheds when the cows examined exceed 20 in number in any given shed. A special sample is one taken from a cow showing some abnormal condition of the udder more or less indicative of tuberculosis.

During the year 184 samples of mixed milk coming into Sheffield by rail or road conveyances were taken for bacteriological examination, 20 of which, equal to 10·9 per cent., gave a positive result, whilst 164 were negative.

In following up the 20 tuberculous samples 23 farms were visited, and the udders of 304 cows examined. At 15 of these farms 17 cows with tuberculous udders were found. At the remaining 8 farms no cows with tuberculous udders were found, and subsequent control samples of the mixed milk from these farms were proved negative by bacteriological examination. In most of these instances the farmers had sold cows off the farms during the period intervening between the taking of the tuberculous mixed sample and the date of the inspection. Three farms were visited because milksellers obtained part of their milk supplies from them.

The average number of cows found at the 20 farms from which tuberculous mixed samples were sent was 15, and if we allow that number for the 164 farms from which the negative mixed samples were sent, we have 2,460 cows the milk from which was examined bacteriologically and proved negative. By virtue of an understanding between the Sheffield Guardians and the Health Committee of the Sheffield City Council, the cows at Doe Royd Farm are periodically examined for tuberculosis of the udder. Four visits were made during the year, and the total number of udders examined was 273. The herd numbers about 70 cows, and allowing each cow an eight months' milking life in the herd, it follows that about 110 different cows were examined, that is, each cow at the farm was examined on an average about three times during the year. One cow was found affected with tuberculosis of the udder. The total number of country cows examined, either clinically or bacteriologically, will thus total up to (37+304+2,460+110) 2,911, amongst which 18 cows with tuberculous udders were found—equal to a percentage of ·6 only. If we take the percentage of 18 tuberculous udders amongst the 451 country cows clinically examined, the figure works out at 4 per cent. These figures are interesting as showing the percentage of cows having tuberculous udders likely to be found amongst dairy stock, should veterinary inspection of such cattle become general throughout the country, which in any legislative measures that may be introduced for the eradication of tuberculosis among cattle would be essential for success.

The number of cowshed premises inside the city is 227, and the number of cows housed in those premises is about 2,400. Allowing each cow to be in a city cowshed eight months, it follows that about 1,200 fresh cows must be added to that number, making 3,600 in the city cowsheds to be examined during the year. The number of inspections of city cows made during the year was 13,958, and 42 cows having tuberculous udders were discovered—equal to a percentage on 3,600 of 1·1.

Including country cows examined, 236 showed symptoms suspicious of tuberculosis of the udder, and a sample of milk was taken from each of them for bacteriological examination. Sixty proved positive, 176 giving negative results. One cow, left over from 1908, was also proved to have a tuberculous udder.

The 61 cows thus definitely proved to have tuberculous udders were disposed of as follows :—11 were sold by the owners and were lost sight of ; and 50 were killed, the carcases of 37 being passed as human food after the diseased parts had been first removed and destroyed, and 13 were totally condemned and the carcases destroyed at the destructor or knacker's yard.

[A table gives a summary of the results obtained under the Tuberculous Milk Clauses since they were first put into force in 1901].

THE CURE OF SURRA IN HORSES BY THE ADMINISTRATION OF ARSENIC.

By J. D. E. Holmes, M.A., D.Sc., Imperial Bacteriologist to the Government of India.

[From Parasitology, Vol. III., No. 3, Oct. 22, 1910.]

[Abstract].

In a paper which appeared in *Parasitology*, Vol. iii, pp. 73—107, and *The Journal of Tropical Veterinary Science*, Vol. ii, No. 1, details were given of thirty-two cases of successful treatment of Surra in horses by means of arsenic and its derivatives.

The object of the present article is to report on the progress of these cases under a prolonged period of observation, and to describe further experiments which have been carried out, on the same lines of treatment, in the Muktesar Laboratory.

Both results further confirm the conclusion previously arrived at—that the treatment effects a complete cure of Surra, and not merely establishes a temporary tolerance of the disease. In the former publication, a tabulated list was given of Surra animals which had shown no return of the disease after treatment, together with the periods during which they had been kept under daily observation (*Parasitology*, Vol. iii, p. 103.) These periods were dated up to Sep. 30, 1900. Since that date these animals have been at work, and their blood has been examined at intervals of two and three weeks. The last examination was made on Jan. 31, 1910, at which time all were in good condition, and no trypanosomes could be detected in their blood.

During this period of four months (Oct., 1909, to Jan., 1910) a number of dogs, rabbits, and guinea-pigs were inoculated with blood from these animals. All gave negative results. In February, 1910, I left India, on furlough, but arranged that a number of these Surra recovered ponies will be available for examination on my return, at the end of the present year.

With a view to further confirm the results already obtained in the treatment of Surra by means of arsenic alone, and arsenic in combination with atoxyl ; and to test the treatment on mules, a number of ponies and mules were inoculated with Surra in July, 1909. When the disease was well established, treatment was carried out by methods of dosage similar to those adopted in the previous experiments.

Nine mules and six ponies were subjected to treatment by the second or combined method (a dose of arsenious acid in solution—Lœffler and Ruehs—followed on consecutive days by a dose of atoxyl subcutaneously and a dose of arsenious acid in bolus). From this number seven mules and four ponies recovered.

Three ponies and two mules were treated with arsenic alone. One mule and two ponies recovered. It was intended to subject a larger number of animals to this method of treatment, but at the time no more animals were available for the experiment.

Twelve ponies were treated with atoxyl and arsenious sulphide chemically pure; one pony recovered.

Treatment with Atoxyl and Arsenic.

A four per cent. solution of atoxyl freshly prepared was used. The solution of arsenic was made according to the method of Loeffler and Ruehs as follows:

Take 1 gramme arsenious acid, 10 c.c. normal soda solution. Dissolve by boiling. Add 10 c.c. normal hydrochloric acid and make up to 1000 c.c.

Normal soda solution:

42 grammes pure caustic soda. Dissolve in 800 c.c. aq. dist. When dissolved make up to 1000 c.c.

Normal hydrochloric acid solution:

Take 181 grammes (weight) hydrochloric acid at 1·1 sp. g. and make up to 1000 c.c.

The Result of the Arsenic Treatment in twenty cases of Surra spontaneously contracted.

In the autumn of 1909 Surra broke out among the Army Transport ponies working on the Kathgodam Road. Twenty of these cases were sent to the Laboratory for treatment. All these ponies were old, not less than sixteen years, worn out, and in the last stage of the disease. They were so debilitated that it required two days to march them from their camp to the Laboratory, a distance of about 18 miles.

On blood examination trypanosomes varying in number from 5 to 100 in a field were detected in every case. The animals were not in a condition to tolerate the administration of arsenic by the mouth. Consequently, an injection of atoxyl was first given which freed the blood from trypanosomes. The injection was repeated after an interval of three days. After a week the ponies had so far improved that it was considered safe to commence treatment. Out of these twenty cases, two died from tympanitis during the course of treatment. There were no symptoms, or post-mortem lesions of poisoning, and death was not attributed to arsenic.

One pony died some weeks after the completion of treatment from injuries received by falling under the partition of his stall at night. He had not shown any relapse.

Seventeen recovered. Four of these had a relapse and received a second course of treatment. Sixteen ponies were returned to their corps after being kept under observation at the Laboratory for three months following their treatment. One pony which injured his hock and is unfit for work remains under observation at the Laboratory.

Taking into consideration the age and condition of these animals, the fact that the disease was contracted spontaneously and had advanced to the last stage, it is evident, that no more severe or practical test could be applied to the arsenic treatment of Surra. The results have been most successful. The recovered animals are being kept under further observation in the Transport Corps.

Rules for Treatment of Surra.

The following instructions were issued in September, 1909, as a guide to veterinary officers in India who proposed to apply the arsenic treatment to Surra cases in their district. As it was pointed out that the preparations and transport of arsenic solutions would be a difficulty in district work, the method of treatment with atoxyl and arsenic in bolus was advised:

I. Solutions of Atoxyl should be freshly prepared before use in distilled or boiled water. The water should be allowed to cool before the solution is made. Carbolic Acid should not be used for sterilising, as it decomposes the Atoxyl. The solution is to be injected subcutaneously with the usual aseptic precautions.

The Atoxyl by itself has no curative effect, but exercises a rapid action in clearing the circulation of mature trypanosomes. It is, therefore, used only when trypanosomes are present in the circulation. The use is indicated at the commencement of treatment. If the first dose does not result in the complete disappearance of trypanosomes from the blood on the following day, a second injection of Atoxyl should be given 24 hours after the first dose. Atoxyl should be kept in the dark. The Atoxyl and Arsenic should be given after feeding.

II. The injection of Atoxyl has to be followed by ten doses of Arsenious Acid in ball. Care must be taken in making up the balls and in mixing the drug with other ingredients. An interval of one day is allowed between each dose.

[The doses which have been determined for horses according to their weight are detailed.]

The amount of Arsenious Acid is gradually increased. If after any dose the animal is dull or off feed, the next dose must be suspended till the symptoms have passed off. If after any doses the animal is off feed and uneasy and showing symptoms of colic, this shows that the animal cannot tolerate the amount of Arsenious acid in that dose, and treatment must be suspended till the animal has recovered, and the next lower dose used, and no further increase in the following doses to be made. Animals showing symptoms of colic are to be treated with opium, chlorodyne or other sedative.

Should trypanosomes reappear in the blood during treatment with Arsenic, Atoxyl should again be used to clear the circulation of the parasites, after which the Arsenic is to be continued.

III. Daily examination of the blood should be made and the result recorded with the daily temperature in the observation charts. After the completion of the treatment the animal should be kept under observation, the blood being examined daily (or at least twice a week) for a period of two months.

If a relapse occurs after the first course of treatment a second similar course should be given with slightly increased doses of Arsenic.

IV. Throughout the treatment the animal should receive a liberal diet and walking exercise.

This treatment in our hands has given 75 per cent. of recoveries.

V. If the animal is in a very advanced stage of Surra and in weak condition, it should be treated with Atoxyl injection alone at intervals of three to four days and receive care and full diet until it has sufficiently recovered to stand the doses of Arsenic.

No reports have been received by me on the results of the treatment of Surra in the districts. Captain Dawson in the *Indian Veterinary Journal*, Vol 1, No. 3, states that Mr. Gibson, Director of the Vaccine Institute, Madras, has tried the treatment with complete success [Working details of dosage, and clinical notes on numerous cases are given: and photographs of six animals "before and "after" treatment].

Conclusions.

I. The results herein recorded are further evidence that Arsenic is a specific for Surra in horses; that a permanent cure is effected, and not merely a temporary tolerance of the disease; that the treatment is simple, and that by careful dosage 70 per cent. and upwards of Surra cases, even when contracted spontaneously and in the last stage, can be cured.

II. Arsenic is best administered in form of arsenious acid, in bolus or in solution. Atoxyl is a convenient form of giving arsenic hypodermically.

The methods of dosage which have been found successful are:

(1) Arsenious acid alone. This is given in bolus, in gradually increased doses, with one day's interval between each dose. Eight to ten doses are sufficient.

(2) Atoxyl and arsenious acid, given alternately in gradually increased doses, with one day's interval between each dose. Five doses of atoxyl and five doses of arsenious acid are sufficient.

(3) Arsenious acid in solution, atoxyl and arsenious acid in bolus. The dose of arsenious acid solution is followed by atoxyl, and arsenious acid, in bolus, on successive days. The doses are repeated once or twice after an interval of four days between each series, and finally after an interval of eight days.

III. The success of the arsenic treatment of Surra depends chiefly on the strict observance of the following principles:

(*a*) Arsenic must be given in full sub-toxic doses. Care should be taken, especially in the earlier part of the treatment, not to administer doses sufficiently large to cause symptoms of poisoning, such as colic, loss of appetite, etc. If this occurs, treatment should be suspended till the animal has completely recovered. In the meantime, occasional injections of atoxyl should be given as required.

(*b*) Arsenic must be administered at intervals, and not continuously day by day. In the systems of dosage (1) arsenious acid alone, and (2) atoxyl and arsenious acid alternately, experience has proved that one or two days' interval between doses is necessary. In many experiments where the doses were given daily, and also when the interval was extended to three and four days, relapses occurred. In the third system of treatment (arsenious acid solution, atoxyl and arsenious acid in bolus), the interval between the first, second, and third series of doses should be four days, and eight days between the third and fourth series.

(*c*) If the animal is in a very debilitated condition, it is advisable to clear the circulation of trypanosomes by one or more injections of atoxyl, and feed carefully for several days before administering arsenic by mouth.

(*d*) Cases which relapse after treatment should be put on a second course with increased doses, either by the same or a different system of dosage.

In cases of relapse, and also where treatment is not well tolerated, it is often advantageous to change the system of dosage.

(*e*) Whenever possible, cases should be kept under observation for a period of two to three months after completion of treatment. Relapses generally occur within a period of six weeks.

(*f*) It is possible to cure Surra by a single dose of arsenic. This is not a practical method, as the amount of arsenic requisite produces severe symptoms of poisoning and a large percentage of cases ends fatally.

Pony C 7 recovered after a single dose of 1 gm. arsenic in bolus.

Mule C 44 recovered after a single dose of 3 gms. arsenic in bolus.

Pony C 30 recovered after a single subcutaneous injection of 200 c.c. of a 4 per cent. solution of arsacetin.

Pony C 31 recovered after a single subcutaneous injection of 100 c.c. of a 10 per cent. solution of soamin.

A lay meat inspector recently explained to a veterinary surgeon that a cow slaughtered for fractured pubic symphysis had a great deal of *Excabiation of blood* in the flesh round the fracture. The same individual calls Hydrothorax—*Hydrodropsy of the heart.*

Insurance companies have found business of insuring the cows sold in Glasgow extremely risky. Better leave that job alone. The perils are great, and the profits small, even at the best.—*Scottish Farmer.*

The Treatment of Ulcers with Normal Serums.

The following extract is from a lecture on the treatment of Gastric and Duodenal Ulcer, by E. C. Hort, F.R.C.P. Edin., at the Medical Graduates' College, in October last.

"The chief value of the oral administration of a normal serum, whether of man, horse, sheeep, or ox, is, in these cases, a local one. Its action in enabling an ulcer to heal is both direct and indirect. Indirectly it is of value on account of the power possessed by mammalian serums to disinfect an ulcer and to check its advance by virtue of the antiferment activities that all such serums possess. In this way obstruction to healing is to a large extent removed. The action of a normal serum in these respects can be readily studied after applying to a superficial ulcer, sinus, or fistula, sterile gauze soaked in, for example, normal horse serum, as I have frequently shown. If, for instance, such dressing be applied to the floor and walls of an old-standing ulcer or fistula soaked in purulent discharge, the eroding activity of cytolytic enzymes from bacteria, broken-down leucocytes and other cells can often be very rapidly arrested—so much so that lesions which are easily open to inspection, such as large superficial ulcers of the arm or leg, may be seen to clear up in a most striking manner, with total arrest of suppuration. This is due to the restraining power that normal serum has on the lytic activity of enzymes acting on proteins, fats, etc., in virtue of its antitryptic, antipeptic, and antilipolytic functions. There can be little doubt that gastric and duodenal ulcers which, whilst open, are constantly being bathed in secretions laden with trypsin and other ferments set free from disintegrated leucocytes, tissue cells, and from bacteria, owe in large measure their continued patency to the action of these ferments as well as to the pepsin and trypsin of the secreted digestive juices. The administration by the mouth, then, of a serum strong to inhibit such action has certainly a rational basis, which also explains to a great extent the excellent results that can be obtained in superficial lesions that refuse to heal by adopting any of Bier's methods of artificial hyperæmia. Auto-serum therapy, properly so-called, owes, in fact, much of its value, as I pointed out in 1908, so the calling up from the lymph stream of antiferment reinforcement locally so much in demand. In addition to the indirect power of normal serums in aiding healing, is the marked direct stimulating effect that a serum that is atoxic and sterile has on ulcers. This again can be demonstrated on superficial lesions that the eye can control. If serum be applied to an ulcer of the arm, leg, or trunk bathed in pus-laden secretion, and totally innocent of any attempt at granulation, a transformation frequently takes place in a very few hours. Not only may suppuration be arrested, but in many cases healthy pink granulations spring up in a surprisingly rapid manner, even in ulcers that have remained open without showing any attempt at repair for twenty and thirty years. I have observed this fact again and again, and have been at a loss to know to what constituent of the serum to attribute this direct stimulating effect. In view, however, of the recent work of Drs. Macalister and Ross on induced cell proliferation it may possibly be that globin derivatives in the applied serum are to a large extent responsible for this stimulating action. It is therefore difficult to believe that the stimulation to healing given by the local application of normal serums to superficial lesions does not also apply to gastric and duodenal ulcer, within, of course, obvious limitations.

Quite apart, however, from direct stimulation of healing, and from indirectly aiding in cure of an ulcer by inhibition of septic processes, is the action of the serum after absorption in restraining hæmorrhage. Previous to 1907 it had been shown by Emile Weil, of Paris,

that intravenous injections of normal serums were often of great value in hæmophilic and purpuric conditions. Early in that year, encouraged by Weil's results, I found that equally good results could be obtained by subcutaneous injection, and even by oral administration, in cases of purpura, though sometimes the serum failed to arrest hæmorrhage in this condition. In the same year I extended the antihæmorrhagic properties of normal serums to the treatment of gastric and duodenal hæmorrhage, as well as to many other forms of bleeding for which a toxic basis could reasonably be surmised. Since then a very large number of cases of hæmorrhage of all kinds has been treated in this way, and, though failure does occur, the results as a whole have been most satisfactory. It was very difficult to control the results by methods of observation other than the purely clinical, particularly so when the serum was given by the mouth. But I found by careful blood counts and hæmoglobin estimations before and after oral administration in cases of anæmia, mainly of the chlorotic type, that great improvement in the blood picture followed. It was therefore clear that oral administration of normal serum had a certain value *quâ* absorption, which, then, cannot be excluded in determining its value in ulceration of the stomach or duodenum, whether hæmorrhagic or not. How it acts after absorption it is as yet impossible to say, though it is quite conceivable that it inhibits the action of gastrolytic toxins (and, as regards hæmorrhage in particular, of the endotheliolytic toxins) that I postulated as possible causes of ulceration and hæmorrhage. Personally I regard this as of much greater importance than any effect which serum may have in accelerating the coagulation time of the blood. However this may be, the fact remains that in these chronic cases of ulcer with or without hæmorrhage of moderate severity the serum has a most pronounced action in relieving pain, in arresting hæmorrhage, and in directly and indirectly aiding in cure of the ulcer. It has been suggested, not unreasonably, that the good results obtained have been due entirely to the generous diet and other details of the treatment, and not to the serum. This, I think, can hardly be the case, as, apart from the palpable effect of the serum on superficial lesions, I find that when the serum is not made part of the treatment the results are not nearly so good.

With regard to the method of administration, normal serums should in cases of open ulcer never be given to starving patients or on an empty stomach, as troublesome and even serious symptoms may ensue. I generally prescribe serum in chronic cases of gastric or duodenal ulcer in doses of 10 c.cm. three or four times a day, immediately after food, in ½oz. of cold water. It must be atoxic, as proved by injection into guinea-pigs, and sterile, as shown by the same method or by attempts at culture. It should be stored, if possible, on ice, and is better not preserved by addition even in small quantities of antiseptics, as its antiferment activity is thereby seriously impaired. If kept in a sufficiently cool place its activity is not seriously impaired even after a year by mere keeping. If there is the slightest reason from its appearance to suspect deterioration from autolysis it should not be used, as otherwise severe gastro-intestinal irritation may be set up. It has happened more than once that a horse when being bled for the purpose of supplying serum has been sufficiently refractory to necessitate the administration of ether. Serum from such a animal retails the smell and taste of ether for many months, and has been known to produce violent vomiting. The serum should be administered for at least a month in all ulcer cases, except the mildest, and then gradually discontinued. If given in the way directed, immediate symptoms of serum disease are of very rare occurrence. Personally I have never seen them. It has, however, happened in five cases that I have knowledge of that signs of hypersensitisation have appeared, in four of which they were ephemeral and of little consequence. The symptoms were those of mild purpura and of eczema. Serum of the sheep gives as good results as horse serum. Human serum can also be used with proper precautions, but its chief use is in serious cases of hæmorrhage. Antilytic serum, which was prepared for me by Messrs. Allen and Hanbury two years ago, can be used in the same way, by oral administration, or as normal horse serum; and, in virtue of its increased antitryptic strength, is of great value. It is, of course, normal serum artificially treated. Unfortunately, it has not proved possible to increase materially the antiferment values of the serum of the horse by injection of the appropriate ferment.—*The British Medical Journal.*

Death from Anthrax.

The adjourned inquest on Edward Henry Sewett, aged 70, a butcher, was held at the Assembly Rooms, Bognor, on Monday, December 12th, by the Chichester Coroner, Mr. J. W. Loader Cooper.

Leonard Adames, Marine House, Waterloo Square, butcher, said on Monday, 21st November, he was told by his brother at Barnham Market that he had a cow at Flansham which had not been well and had died. He asked witness to send one of his men out to dress her. Deceased happened to be at the Market, and he told him to go to Flansham to draw the cow, by which he meant to strip it of its hide only.

Albert Bowley, cowman to Mr. Owen Adames at Flansham, said the cow was bred by Mr. Adames, and was 9 or 10 years. She was kept for suckling calves, and her milk was not sold. She went wrong sometime back, and was seen by a veterinary surgeon. When she recovered they started to fatten her. They had been fattening her about four months, when she became ill again and died. She had been kept in a hovel by herself.

Owen Ernest Adames, Flansham, farmer, said the cow died from anthrax. He corroborated the story of the last witness. When he thought she was going to die he determined to kill her and save the skin. If the skin was free from blood it was more valuable, and the carcase might be useful to boil up for pigs. He went for a knife, and when he returned the cow was dead. He stuck her and helped deceased to dress her. They partly dismember her, and then he saw the spleen was very much enlarged, so he told deceased to stop. He sent for a veterinary surgeon, who said it looked suspicious, and took samples of the blood. It was then proved to be a case of anthrax, and every particle of the carcase was burnt. He reported the case to the police. Both deceased and witness had blood on their hands.

Mr. W. Conway Cooke, M.R.C.S., L.R.C.P., said on 22nd November Mr. Adames informed him a cow had died from anthrax, and he told him that he and deceased must be kept under supervision. Deceased came to see him the next morning. He said he had a slight cut on the middle finger of his right hand which he made when washing his knives. He treated this, and deceased appeared well. Later he found on the upper part of the right arm a small pustule which increased tremendously, and the glands became swollen. Deceased, however, said he felt quite well. He afterwards received a message to go and see deceased, whom he found much worse, and he died on 30th November. The cause of death was anthrax.

Henry Edward Sewett, a son, said deceased made no complaint though he knew he was suffering from the disease.

The jury returned a verdict that deceased died from anthrax.—*Sussex Daily News.*

DISEASES OF ANIMALS ACTS 1894 TO 1903, SUMMARY OF RETURNS.

Period.	Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Counties Affected	Sheep Scab.	Swine Fever.	
	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Out-breaks	Ani-mals.	Animals Attacked	Out-breaks	Out-breaks.	Slaughtered. *
GT. BRITAIN. Week ended Dec. 17	39	43			3	3		30	38	520
Corresponding week in 1909 ...	28	36			7	13		38	32	295
Corresponding week in 1908 ...	28	34			15	40	Essex 1	31	26	708
Corresponding week in 1907 ...	25	28			15	30		52	26	195
Total for 51 weeks, 1910	1439	1706	2	15	343	1000	London 1 Middlesex 1	477	1527	14667
Corresponding period in 1909 ...	1294	1675			526	1739		662	1636	14300
Corresponding period in 1908 ...	1085	1398	3	112	779	2411		811	2040	14012
Corresponding period in 1907 ...	1061	1432			841	1884		699	2308	11115

Board of Agriculture and Fisheries, Dec. 20, 1910.

	Parasitic Mange (outbreaks)									
IRELAND. Week ended Dec. 10	...	...	...	...	...	...	1	9	1	16
Corresponding Week in 1909 ...	...	...	...	...	...	...	1	15	1	6
Corresponding Week in 1908 ...	...	...	...	...	...	...	...	7	...	13
Corresponding Week in 1907 ...	...	...	...	...	1	...	...	17	7	49
Total for 50 weeks, 1910 ...	7	13	...	...	1	2	64	435	90	2135
Corresponding period in 1909 ...	8	8	...	...	...	...	74	396	88	1568
Corresponding period in 1908 ...	7	10	...	...	...	...	39	348	156	3588
Corresponding period in 1907 ...	3	5	...	...	6	11	74	272	153	2684

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Dec. 14, 1910

NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection

Rabies (?) at Attercliffe.

Some sensation was caused in Attercliffe, on Monday, 19th inst., by the strange behaviour of a brindle terrier dog, belonging to Mr. John Webster, of the Gate Inn, Attercliffe Common. A man named James Taylor, of 19 Rotherham Street, went to the police station to report an attack made by the animal on his 16-year-old daughter, Ada Taylor. It had seized the shawl she had over her head, but had not actually bitten the girl. A Mrs. Heppenstall, of 15 Rotherham Street, however, gave information that a week or two ago the dog had bitten her adopted son, George Alfred Sheldon, aged 11 years. As the parties were leaving the police station the dog ran by, foaming at the mouth, apparently ferocious. Police Constable (47) Hughes got out the dog-catcher, which is kept in readiness at the station, and soon secured the animal. Mr. Lloyd, Corporation Veterinary Surgeon, was notified, and one of his assistants, Mr. W. J. Young, poisoned the dog at the police station. Mr. Lloyd made a post-mortem examination, but found no conclusive evidence of rabies, and sent the head to the Board of Agriculture for examination by the officials of that Department.—*Sheffield Daily Telegraph.*

The Ætiology of Hydrophobia.

In this country, owing to our insular position and a scheme of effective quarantine, rabies is now practically unknown, and research into its cause is therefore at a standstill. Abroad, however, this is not the case, and the latest investigations of Negri, published in 1909 in The *Zeitschrift für Hygiene und Infectionskrankheiten*, are being accepted as an advance of knowledge which is of permanent value. Negri has demonstrated certain bodies in the protoplasm of the nerve cells from cases of hydrophobia, which undergo a cycle of development and finally sporulate. He regards these forms as protozoal, and as the parasitic cause of rabies; and other workers seem to be coming to the conclusion that he is right (Reichel, Whitington, Frothingham). These bodies were first described by Negri in 1903; they are round, oval, or elliptical in shape, and are never found except in rabies. The name neurocytes has been given to them, since they are confined to the cells of the central nervous system. In size they vary from 2μ to 8μ in man; in some other animals they may be 20μ or more in length; there may be more than one in a cell. Their seats of predilection are the pyramidal cells of the horn of Ammon, and the Purkinje cells of the cerebellum.

The neurocytes stain well with eosin, and Negri especially recommends Mann's and Romanowsky's stains. Many other stains will give good results, and osmic acid is said to show them up well. The structure of the Negri body is somewhat complex. Numbers of very small, round, highly refractile particles are to be seen; and there are also larger forms, round or oval in shape, less refractile, and granular in appearance, of which but one or two are contained in each neurocyte. Transition forms between these two exist. These masses their discoverer regards as chromatin. There is yet another kind of content in the neurocytes which is supposed to be connected with spore formation. The spores themselves are believed to be ultra-microscopic.

Certain criticisms on these observations were offered three years ago.* It is objected that the Negri bodies are never found in material that is surely virulent, such as the saliva, the salivary glands, and the nerves. The answer is that the virus is conveyed from patient to patient in the spore form, too minute to be detected microscopically. To this Frosch says that the virus of

* **Frosch**: *Kolle und Wassermann's Handbuch der Micro-organismen*, 1907.

rabies passes through filters the pores of which are so fine as to be impervious to the smallest particles yet seen in a neurocyte. It is also said that the neurocytes are absent altogether during the incubation period, through the nervous system is already then infectious.

In dogs deceased from hydrophobia the Negri neurocytes are found in 98 to 99 per cent. Even in the few exceptional cases it is said that changes can always be detected in the plexiform and Gasserian ganglia, consisting of atrophy of the cells and invasion by the endothelium of the capsule. This is not specific to rabies, but is a valuable adjuvant to the Negri bodies as a means of diagnosis, and is always to be regarded as suspicious. These pathological discoveries have not yet been put to any practical application in the prevention and treatment of the disease, except in so far as they facilitate the diagnosis in the case of a suspected dog.—*The Hospital.*

The German Freibank.

The *Freibank* has been known in Germany for a very long period. In certain parts of southern Germany, as long ago as the thirteenth century, it was enacted that "any butcher who shall slaughter a measly animal shall sell it to no one without his knowing its condition," and at the end of the fourteenth century it was required in Hamburg that measly meat should be sold in a special booth upon a white cloth. An interesting account of these institutions is contributed to the December number of *The Contemporary Review* by Miss C. Smith Rossie, who has obtained her information on the subject at first hand. She describes the practical outcome of the inspections. The highest class contains such meat as may be adjudged first class, in the next class is meat of a lower value, in the third class that which is described as conditionally fit and which would be unfit for human food unless scientifically sterilized. The lowest is entirely unfit for human food. The meat placed in the second and third classes is sold in the *Freibank*. That which is only conditionally fit is placed in a closed chamber and subjected to 212 F. for two hours. At the end of this period the flesh is quite free from living germs, but it is described as very unpleasant to behold, and the blackish liquor that has been drawn off by the hot air is still less inviting, yet it is sold to the poor people, who can purchase it either for soup making or as a restorative for infants and sick people. The regulations governing the sale of *Freibank* meat prohibit its purchase for use in any hotel, restaurant, or eating house, and it is not used in the State prisons. Miss Rossie declares that the poorer classes whose poverty alone compels them to resort to *Freibank* meat, spoke of it with such scorn as to convince her that the system would not long stand the force of public opinion.—*The British Medical Journal.*

Action Concerning a Mare.

JENKS *v.* SYMES.—Before Mr. Justice Bray and a Common Jury. In this case Mr. E. R. Jenks, a stockbroker, sued Mr. C. H. Symes, of Church Farm, Perivale, for the value of a mare which had been sent to the defendant for agistment, and which had been lost, owing, as alleged, to the negligence of the defendant.

Mr. Frank Dodd appeared for the plaintiff; and Mr. Holman Gregory, K.C., and Mr. H. J. Turrell for the defendant.

Mr. Dodd, in opening the case to the jury, said that in 1898 the plaintiff bought a yearling mare from a Mr. Lloyd, of Welshpool, at a price of £50. She was thoroughbred, and the plaintiff hunted her and entered her for races, in which she was successful. In September, 1908, she was sent to Mr. Hornby's farm, Church Farm, Perivale, which was taken over by the defendant in March, 1909. The mare had been covered by Red Sahib, belonging to Mr. Ernest W. Robinson, of Leighton Buzzard, and was in foal. She was last seen on the defendant's farm on September 7, and on the next day it was found that she was missing. A gap was discovered in the fence of the defendant's field through which the mare must have escaped. From that time to this she had not been seen. The plaintiff had paid a fee of £10 10. to the owner of Red Sahib, and the value of the mare was £100.

The plaintiff, in giving evidence, bore out counsel's opening statement. The defendant wrote to him on September 10 saying the mare was missing, and on visiting the premises the defendant showed him a gap in the field where the mare had been kept.

Cross-examined by Mr. Turrell, witness said that he had previously seen the field where the mare was kept and had not seen anything to object to.

Mr. Francis Benthall, stockbroker, and Mr. William Jenks, brother of the plaintiff, corroborated the plaintiff's evidence as to the visit referred to.

Cross-examined by Mr. Holman Gregory, they said that the fences round the rest of the field were in good condition.

The plaintiff was then recalled and cross-examined by Mr. Holman Gregory with regard to the conversation which took place at the interview on the 12th.

Mr. George Brown, M.R.C.V.S., of Leytonstone, valued the horse at £100.

Mr. Turrell, in opening the case for the defendant, suggested that the mare had been stolen. Before she was lost there was no gap in the fence. Someone must have removed the posts and taken the mare through the gap.

The defendant then went into the box and was examined by Mr. Turrell. He said that on the evening of the 9th he walked through the field where the mare was kept, but could not see her. The next morning he went to the field and found a gap in the fence caused by posts having been pulled up. On the Wednesday previous, the 8th, the fence was in good condition.

Mr. George William Symes, brother of the defendant, said he last saw the mare on the morning of the 9th. He searched for her on the morning of the 10th, but could not find her. He found the gap in the fence and repaired it.

Mr. Hornby, the former owner of Church Farm, said he knew the mare quite well; he valued her at not more than £25.

Mr. Justice Bray, in summing up to the jury, said that they must be satisfied that the defendant was guilty of negligence. His duty was to take reasonable care that the mare was not lost, and he ought, therefore, to see that the fences were in order. His Lordship then reviewed the evidence in detail.

The jury found a verdict for the plaintiff and assessed the value of the mare at £60.

Judgment accordingly with costs.—*The Times.*

Personal.

Mr. J. BROWN, Invergordon, who has for a number of years enjoyed a large and growing practice, with patrons in Easter and Wester Ross, the Black Isle, and Sutherlandshire, has just completed an eight weeks' post-graduate course of study in bacteriology and pathology in London, and has qualified for the Fellowship degree of the Royal College of Veterinary Surgeons. Mr. Brown is a native of Lanarkshire, and has always been a keen student of veterinary science. He enjoys in a very marked degree the confidence of his wide circle of patrons, who are sure to appreciate at its proper worth his determination to win by examination the highest degree of his profession—F.R.C.V.S.—*Scottish Farmer.*

ROYAL COLLEGE OF VETERINARY SURGEONS.

Examination in London.

At a meeting of the Board of Examiners held in London on December 9th for the Written, and on and between December 20th and 22nd inclusive for the Oral and Practical Examination, the following gentlemen passed their Final Examination :—

Mr. R. M. Aulton
B. R. Body
D'Arcy S. Beck
J. McK. Brown
L. F. Eady
T. J. Faithfull Davies
J. C. Gaunt
S. G. M. Hickey
Mr. R. Moore
J. de Meza
U. F. Richardson
G. A. Roberts
W. K. Stephens
H. D. Sparrow
T. L. Vaisey

REVIEW.

Veterinary Parasitology. — By Reginald R. Smythe, m.r.c.v.s. Cr. 8vo. Pp. xiv.+129. With 29 illustrations in text, and chart, cl. lettered. Price 4s. net. (Baillière, Tindall, and Cox, 8, Henrietta Street, London, W.C.)

The author's avowed idea in preparing this little work has been the production of a book "covering the course laid down for the student," "of practical value to the veterinarian as a book of reference," and at the same time "concise and of a small size."

These extracts from the preface augur an attempt to condense the maximum amount of information into the minimum compass ; and we can hardly think of any department of veterinary science less adaptable to this procedure than parasitology. The subject is so vast—is, indeed, itself a collection of so many large, diverse, and very complex subjects—that even the bulky and excellent work of Neumann is not wholly satisfactory as a book of reference upon it. The result of an attempt to deal with it in the space which Mr. Smythe has allowed himself was bound to be superficial and fragmentary in the extreme, and this is apparent throughout the volume before us.

Having said this, we need not dwell upon many single points to which exception could be taken. Parasitological terminology is just now in a transitional condition, and we will not criticise the author's frequent preference for the older nomenclature. We may remark, however, that no mention is made of the present uncertainty regarding the number of species of the equine sclerostomes—only two being named ; that while intertracheal injection is recommended for verminous bronchitis, the probably superior intertracheal spray is unnoticed ; and, finally, that no allusion is made to the real evidence that now exists of the *rôle* of *staphylococcus pyogenes albus* in the pustular form of follicular mange. In some respects, then, the work is scarcely up to date ; and we may also indicate two obviously clerical errors.

Mesocestoides lineatus is described as having the *suckers* centrally placed in *each* segment—genital pores of course being meant ; and in an appendix describing a special treatment (which is new to us, and appears hopeful—if somewhat severe) of pustular follicular mange, the disease itself is never named. In the body of the work, the reader is referred to the appendix, but three words should be added to the latter.

These, and similar points can be rectified in a future edition ; and Mr. Smythe deserves full credit for an attempt, very early in his professional career, to fill what he believes to be a gap in our literature. At the same time we repeat that no book on this subject is likely to be of great service to both students and practitioners, unless it considerably exceeds the dimensions of this one.

The Encyclopedia of Sport.—Edited by the Earl of Suffolk and Berkshire. Parts viii-ix. Cyc. Fal. Price 1s. each net (W. Heinemann, 21, Bedford Street, W.C.)

Two articles in these numbers are of somewhat special interest to veterinary readers. One concerns "Dogs" and largely consists of descriptions of the many breeds important to the sportsman, copiously illustrated with typical photographs. A section on the breaking and training of dogs is added ; and also a short section on canine diseases, which is certainly open to criticism, The only symptoms of distemper quoted, for instance, pertain to the catarrhal form of the disease, and one is stated to be "a temperature of over 100 ;" while a prescription for mange consisting of "a mixture of two parts of olive oil with one part of paraffin oil and half a pound of sulphur" really requires elucidation. Still, very few diseases are dealt with, and those very briefly ; while the importance of obtaining veterinary advice is certainly not ignored.

The second article we mentioned is on "Driving" which, in its various departments, is dealt with very fully. A certain amount of knowledge on the part of the reader is pre-supposed, but not much ; and altogether this article will be found very helpful to the comparative novice in driving. It concludes with an interesting section upon private and stage coaching.

Duck-shooting, deerstalking, and falconry, are perhaps the most interesting to English readers of the remaining subjects ; while the series of articles upon elephants—their species and habits, with the methods of shooting and capturing them—may be commended to those who care for sport abroad.

W. R. C.

ROARING OPERATIONS.

Sir,

Permit me, through the columns of your journal, to present my kindest regards to "Perplexed," and to assure him that I fully appreciate his compliments: but that soap won't wash, and though I don't wish to be offensive, I regret to say there is still the same note of jealous contempt in his letter.

He lays stress on the fact that the "Pioneer" operators are being paid for their work, but are they not entitled to be paid by persons who can well afford to pay, and who, as a rule, are well able to take care of themselves.

Now as regards "why" the new operation should be a success: it seems easy enough to understand that "stripping the ventricle" makes a raw surface on either side, and that the two raw surfaces unite in the healing up, and thus obliterate the ventricle and thereby hold, as it were, the vocal cord from moving inwards.

"Perplexed" will hardly be satisfied with such "simple faith," he will be like St. Thomas—he must see before he believes. I have seen the larynx two months after operation, and the ventricles as such were gone, and the vocal cords were pulled entirely out to the side of the larynx.

I have heard Prof. Hobday relate the results of some 100 cases; I have heard from Prof. Woodruff the results in a large number of cases ; I have heard from some well known men in Ireland the results of about 30 cases ; and I have examined eight cases myself, all pointing to the success of the operation. Perhaps it is my innocence makes me think so.

The gospel says—"There are none so blind as those who *will* not see," and I suppose "Perplexed" will try to convince himself that he must still remain so. Might I remind him of those true and beautiful lines :

"Be not the first by whom the new is tried
Nor yet the last to lay the old aside."

Yours, etc., P. J. Howard.

Ennis, Ireland.